Habitat Areas of Particular Concern (HAPC) Proposal

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Please check applicable box (es):
☐ GOA Groundfish FMP
X BSAI Groundfish FMP
☐ Scallop FMP
☐ BSAI Crab FMP
☐ Salmon FMP

Date: January 2004

Title and Brief Statement of Proposal:

Bowers Ridge Habitat Area of Particular Concern

North of Petrel Bank in the Aleutian Islands is a unique submerged ridgeline that spans depths from as shallow as 11 meters, to greater than 3,700 meters. The proposed area contains essential fish habitat for dusky (*Sebastes ciliatus*), northern (*Sebastes polyspinis*), shortraker (*Sebastes borealis)*, rougheye (*Sebastes aleutianus*), thornyhead rockfish (*Sebastolobus alascanus*), plus other FMP species. The complex bathymetric features of Bowers Ridge provide a physically complex habitat that likely supports undisturbed coral gardens and provides important habitat refuge for managed fish species. The area includes a number of pinnacles that rise close to the surface as well as submarine canyons and a deep-sea plateau. A similar area was proposed for essential fish habitat protection in the Preliminary Draft EFH EIS, where the analysts noted, "Because of limited recent fishing effort, it is more likely that resident corals have not been removed…"(NMFS 2003a). Protection of Bowers Ridge from bottom trawling will greatly reduce unintentional impacts to coral and rockfish habitat caused by exploratory fishing or the development of any future trawl fisheries in this area.

Objectives of Proposal:

The objective of this proposal is to provide for the lasting conservation of undisturbed cold-water corals located in the Bowers Ridge area.

Statement of Purpose and Need:

An average of 40 metric tons of corals were taken as bycatch in the Bering Sea and Aleutian Island bottom trawl fisheries annually between 1997 and 1999 (NMFS 2003b). Historically, some bottom trawl effort has occurred in the Bowers Ridge area (Fritz et al. 1998). However, north of Petrel Bank, only a few bottom trawl tows have been documented in recent years (see attached map). Researchers have documented that Alaska cold-water corals provide important habitat features for both commercial and non-commercial species (Krieger and Wing 2002). Research on bottom trawl impacts has determined that the first passage of a trawl in an unfished area has the greatest impact to seafloor habitat features (Freese 1999). Since Bowers Ridge is a relatively unfished area, HAPC designation with management measures that prevent bottom trawling will

significantly limit impacts to undisturbed corals, sponges and other living habitat features in this area.

While no seafloor habitat research has been conducted on Bowers Ridge, the complex physical features of the ridge indicate that this area supports coral habitat similar to that documented in other areas of the Aleutian Islands that have similar physical complexity. Observers have documented some coral bycatch in areas of the ridge that have been historically fished. However, much of the ridge has received little to no fishing effort and therefore data is limited. This should not be considered a setback but an opportunity to implement a management tool that conserves cold-water corals and marine biodiversity in a data-limited area.

A description of how the proposed HAPC addresses the four considerations set out in the final EFH regulations:

Importance of the ecological function provided by the habitat:

Although few *in situ* observations have been made of deepwater corals, researchers are beginning to understand their ecological significance. Research in the Gulf of Alaska documented multiple rockfish species, shrimp and crab in close association with *Primnoa* coral (Krieger and Wing 2002). The structure and color of corals likely provide juvenile rockfish protection from predators, while adult rockfish may associate with corals for feeding. Bowers Ridge is considered to be essential fish habitat for a number of rockfish species and corals have been documented as bycatch in this area.

Extent to which the habitat is sensitive to human-induced environmental degradation:

Deepwater corals found off Alaska, especially of the order Gorgonacea, are long-lived (>500 years) and slow growing animals (Witherell and Coon 2000). Given their size and longevity, gorgonian corals may be the most sensitive to fishing impacts. Bottom trawls have been documented to have the greatest and most intensive impact on coral habitats in the North Pacific region (NMFS 2003b). Often corals are not brought to the surface by fishing gear yet are still damaged. Broken corals remaining on the seafloor and colonies that are tipped over have increased susceptibility to predation and polyps die because they are no longer oriented with the current, rendering them unable to feed (Krieger 2001).

Whether, and to what extent development activities are, or will be, stressing the habitat type:

Fishing effort distribution maps indicate that there has been little bottom trawling and relatively low levels of longline effort along Bowers Ridge in recent years (NPFMC 2002). Since some bottom trawl effort has been documented in the past, it is foreseeable that exploratory fishing or developing fisheries could occur in this area in the future.

However, because of its remote geographic location, it is not likely that Bowers Ridge will become an economically important fishing ground.

Rarity of the habitat:

The complex physical features of this submerged ridgeline, including a series of pinnacles and steep canyon walls, make this a highly unique habitat area. Relatively undisturbed cold-water corals are a highly likely component of the living seafloor in this area as determined from coral bycatch records, complex bathymetric features and the relatively unfished state of the proposed area.

Proposed management measures and their specific objectives:

The proposed management measure for the Bowers Ridge Habitat Area of Particular Concern is no bottom trawling. The specific objective is to provide for the lasting conservation of undisturbed cold-water corals and rockfish habitat located in the Bowers Ridge area.

Proposed solutions to achieve these objectives: (how might the problem be solved) Include concepts and methods of measuring progress towards those objectives:

Since Bowers Ridge is a data-limited area, specific locations of coral gardens along the ridge are unknown. Designating Bowers Ridge as a Habitat Area of Particular Concern with the associated management measure of no bottom trawling, will limit potential fishery impacts from incidentally damaging resident corals. Future research in Bowers Ridge may be warranted using a manned submersible or remotely operated vehicle, to research coral abundance and diversity in the proposed area.

Identification of the fisheries, sector, stakeholders and communities to be affected by the establishment of the proposed HAPC (Who benefits from the proposal and who would it harm?) and any information you can provide on socioeconomic costs, including catch data from the proposed area over the last five years:

There are no foreseeable economic costs to any fisheries, sector, stakeholders or communities by designating the proposed Bowers Ridge HAPC and implementing a no bottom trawl management measure.

See attached maps for fishing effort data by bottom trawls, pots, and longlines over the five-year period of 1998 – 2002.

Clear geographic delineation for proposed HAPC (example written latitude and longitude reference points and/or delineation on an appropriately scaled NOAA chart):

This proposal contains two different sites for Bowers Ridge (Bowers A and B) so that the design of the site can be evaluated against different standards such as ease of enforcement, socioeconomic and ecological considerations.

Bowers A:

177.4800	52.8500
177.5200	54.3400
175.9700	54.3800
175.8900	55.5100
-178.9800	55.1900
-178.9800	52.9100

Bowers B:

175.5900	54.9800
176.4600	55.4900
178.7600	55.3700
-178.5300	53.6700
179.7400	52.5700

Positive longitudes denotes E of 180° longitude.

See attached maps.

Provide best available information and sources of such information to support the objectives for the proposed HAPC. (Citations for common information or copies of uncommon information):

Freese, L., P.J. Auster, J. Heifetz, and B.L. Wing. 1999. Effects of trawling on seafloor habitat and associated invertebrate taxa in the Gulf of Alaska. Mar Ecol Prog Ser 182: 119-126.

Fritz, L.W. et al. 1998. Catch-per-unit-effort, Length, and Depth Distributions of Major Groundfish and Bycatch Species in the Bering Sea, Aleutian Islands, and Gulf of Alaska Regions Based on Groundfish Fishery Observer Data. NOAA Technical Memorandum NMFS-AFSC-88.

Krieger, K.J. 2001. Coral (Primnoa) impacted by fishing gear in the Gulf of Alaska. In J.H. Martin Willison et al (eds.) Proceedings of the First International Symposium on Deep-Sea Corals, Ecology Action Center and Nova Scotia Museum, Halifax, Nova Scotia Canada.

Krieger, K.J., and B.L. Wing. 2002. Megafauna associations with deepwater corals (*Primnoa* spp.) in the Gulf of Alaska. Hydrobiologia 471: 83-90.

NMFS 2003a. Preliminary Draft Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska. Chapter 4 – 129.

NMFS 2003b. Alaska Groundfish Fisheries Draft Programmatic Supplemental Environmental Impact Statement. Appendix A-T-231, A-T-535.

Witherell, D., and C. Coon. 2000. Protecting Gorgonian Corals off Alaska from Fishing Impacts. Proceedings of the Nova Scotian Institute of Science; First International Symposium on Deep Sea Corals; 117-115. Nova Scotia Museum, Halifax, Canada.

Bowers Ridge HAPC proposal

HAPC Proposal #10

AI: Observed trawl effort (#/25km2) '98-02

- low
- medium
- high

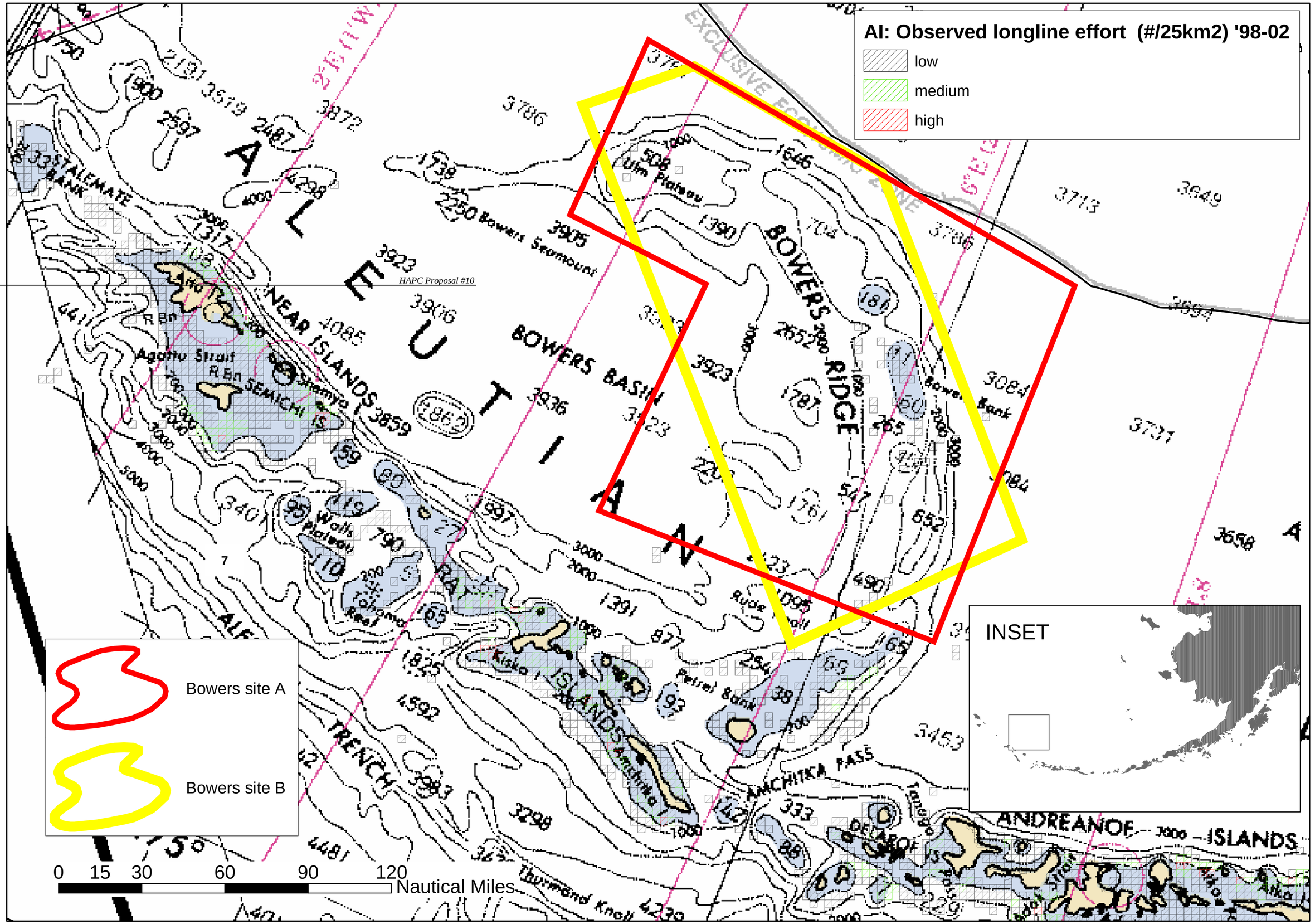
Bowers site A

Bowers site B

0 15 30 60 90 120 Nautical Miles

INSET

Bowers Ridge HAPC proposal



Bowers Ridge HAPC proposal

HAPC Proposal #10

AI: Observed pot effort (#/25km2) '98-02

- low
- medium
- high

Bowers site A

Bowers site B

INSET

0 15 30 60 90 120 Nautical Miles